

PATENT APPLICATION
Docket No.: N.C. 79,834

REMARKS

Claims 15-26, 29, 31, 33, and 34 are pending in the application. Claims 20-25 have been withdrawn pursuant to an election of species requirement. Claims 30 and 32 are cancelled by this amendment. No claims are presently allowed.

Claims 15 and 26 have been amended to incorporate a modified limitation from cancelled claims 30 and 32 that the pulsed laser beam has an energy and wavelength chosen to vaporize one or more monolayers of the source material adjacent to the target substrate without vaporizing the rest of the source material. Support for the recitation of the wavelength is found at page 14, lines 2-5.

Interview Summary

Applicants wish to thank the Examiner for granting the interview of 05/25/2004. In the interview it was agreed that the amendment to claim 15 as shown above would overcome the prior art of record. It was discussed whether the curable material disclosed in Bills would polymerize when heated to the temperatures disclosed in Bills. It was agreed that evidence on this point would have to be presented in a formal response for further consideration.

Claim Rejections – 35 U.S.C. § 103

The Examiner rejected claims 15-19, 26, 30, and 32 under 35 U.S.C. § 103(a) as being unpatentable over Bills (US 5,308,737) in view of Palazzotto (US 5,376,428).

The invention of claim 15 is a method for creating a deposit of a material of interest on a receiving substrate. A first laser is directed through a laser-transparent target substrate having a coating that comprises a source material to cause the source material to be removed from the surface of the support and deposited on a receiving substrate. One or more monolayers of the source material adjacent to the target substrate are vaporized without vaporizing the rest of the source material. A second laser is directed to strike the deposited source material to transform the source material into the material of interest.

Bills discloses a laser transfer process where a donor element is placed in intimate contact with a receptor sheet (col. 11, lines 48-50). The donor element has a backing layer, a radiation absorbing material, a gas forming composition, and a thermal mass transfer material (col. 1, lines

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60-66). Bills discloses that the thermal mass transfer material may be a monomer, oligomer, or cross-linkable resin (col. 10, lines 34-36).

Palazzotto discloses an energy polymerizable composition having an ethylenically-unsaturated monomer. A laser may be used to polymerize the composition (col. 15, lines 21-40).

In order to make a *prima facie* case of obviousness, the references must disclose each limitation of the claims. Neither reference discloses that a portion of the of the source material adjacent to the target substrate is vaporized without vaporizing the rest of the source material. Bills specifically states that the transfer material is not sublimated (col. 5, line 22), which does not meet the limitation that one or more monolayers adjacent to the substrate are vaporized. The gas-producing polymer in Bills is not a source material, but even if were considered one, it is completely decomposed into gas and does not meet the limitation that part of the source material not be vaporized.

Palazzotto does not disclose a laser transfer process and so does not disclose the limitation discussed above.

The Examiner rejected claims 29 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Bills in view of Palazzotto and further in view of Vorst (US 4,401,992).

Claims 29 and 31 recite that the second laser decomposes the material of interest. Vorst discloses that a laser may be used to decompose a resin to create a color change.

Claims 29 and 31 include the limitation from claims 15 and 26 that one or more monolayers of the source material adjacent to the target substrate are vaporized without vaporizing the rest of the source material. As discussed above, this limitation is not disclosed in Bills or Palazzotto. Neither is the limitation disclosed in Vorst, which does not disclose any laser transfer process.

The Examiner rejected claims 33 and 34 under 35 U.S.C. § 103(a) as being unpatentable over Bills in view of Palazzotto and further in view of Mayer (US 6,159,832).

Claims 33 and 34 recite that there is a gap between the target substrate and receiving substrate. Mayer discloses a laser transfer process for transferring a metal by completely vaporizing the metal.


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Claims 33 and 34 include the limitation from claims 15 and 26 that one or more monolayers of the source material adjacent to the target substrate are vaporized without vaporizing the rest of the source material. As discussed above, this limitation is not disclosed in Bills or Palazzotto. Neither is the limitation disclosed in Mayer, which teaches that the transferred metal is vaporized and resolidified on the receiving substrate (Abstract). There is not a transferred portion that is not vaporized.

In view of the foregoing, it is submitted that the application is now in condition for allowance.

In the event that a fee is required, please charge the fee to Deposit Account No. 50-0281, and in the event that there is a credit due, please credit Deposit Account No. 50-0281.

Respectfully submitted,



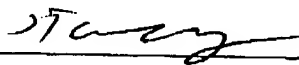
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